Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	**)**	
	)	
Digital Broadcast Content Protection	**)**	**MB Docket No. 02-230**
	)	

REPLY COMMENTS OF THE MOTION PICTURE ASSOCIATION OF AMERICA, INC., METRO-GOLDWYN-MAYER STUDIOS INC., PARAMOUNT PICTURES CORPORATION, SONY PICTURES ENTERTAINMENT INC., TWENTIETH CENTURY FOX FILM CORPORATION, UNIVERSAL CITY STUDIOS LLLP, AND THE WALT DISNEY COMPANY

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The Motion Picture Association of America, Inc. ("MPAA"), Metro-Goldwyn-Mayer Studios Inc., Paramount Pictures Corporation, Sony Pictures Entertainment Inc., Twentieth Century Fox Film Corporation, Universal City Studios LLLP, and The Walt Disney Company hereby submit these Reply Comments in response to the Commission's Further Notice of Proposed Rulemaking.[1]

INTRODUCTION AND SUMMARY

As the MPAA *et al.* stated in their initial comments in this FNPRM, the Commission should adopt the three marketplace criteria and the "at least as effective" test as set forth in the Joint Proposal of the MPAA, 5C Companies, and Computer Industry Group to the Broadcast Protection Discussion Group. *See* Final Report of the Co-Chairs of the Broadcast Protection Discussion Subgroup to the Copy Protection Technical Working Group, June 3, 2002, Tab F-2. Those criteria offer the most fair and efficient means of authorizing secure technologies for use

[1] *See* Report and Order and Further Notice of Proposed Rulemaking, *Digital Broadcast Content Protection*, MB Docket No. 02-230, FCC 03-273 (rel. Nov. 4, 2003) ("Broadcast Flag Order").

with DTV products. If the Commission nevertheless wishes to explore "functional criteria," it should consider a model developed by the MPAA attached hereto as Appendix B.

No matter what criteria the Commission adopts, it must provide for an adequate opportunity for content providers to challenge proposed technologies. This means, at a minimum, that technology proponents must be required to submit detailed explanations of how their technology will prevent the unauthorized redistribution of Marked and Unscreened Content. While a "Personal Digital Network Environment" need not be defined at this time, the Commission must approve only those technologies to Table A that constrain protected content to a "Local Environment," which is the set of compliant, authorized devices within a tightly defined geographic area around a Covered Product. Anything less would allow the widespread unauthorized redistribution of digital broadcast content and undermine the system of localism that is one of the Commission's most important policy goals. Finally, no matter what criteria are ultimately adopted, the Commission need only engage in a review of certain security and intellectual property-related license terms. The Commission should not engage in a detailed review of every term of every license, because the market will select against unappealing terms, and for the Commission to do so may tend to stifle innovation in content protection technologies.

The Commission should also adopt the withdrawal standard and procedures contained in the Joint Proposal. In case of a serious compromise of a technology, there must be some means for removing a technology from Table A, so that future devices will no longer be sold with that output or recording method. The standard and procedures contained in the Joint Proposal represent a workable solution that requires consideration of the harms to content owners, device manufacturers, and consumers resulting from the compromise and proposed withdrawal. Nearly all of the comments agreed in broad outline with this proposal.

Finally, the Commission should require encryption of the digital basic tier. Doing so would help pave the way for future modulation schemes used by cable operators, and would help protect cable-originated programs, not just retransmitted broadcasts, against unauthorized redistribution.

I. The Commission Should Adopt the Criteria Contained in the Joint Proposal

A. The Marketplace Criteria and the "At Least as Effective" Test Provide a Fair, Objective and Rapid Means of Authorizing Technologies for Use With DTV Products

The comments filed in response to the Commission's original NPRM as well as those filed in response to the FNPRM illustrate that the three marketplace criteria and the "at least as effective" test are the optimal means of authorizing technologies for use with DTV equipment. In summary, they are:

- 3 Major Studios and/or Major Television Broadcast Groups use or approve the technology; *or*
- 10 Major Device Manufacturers (including software vendors) use or approve the technology; *or*
- the technology and its relevant licensing terms include appropriate output and recording controls and that technology is permitted to be used under a license for another "marketplace" approved technology; *or*
- the technology is "at least as effective" as a technology approved under one of the three criteria listed above (the "Marketplace Criteria").

Further details, definitions, and procedures are spelled out in Appendix A.

The marketplace criteria offer a means of authorizing technologies already in use or approved for use in the protection of content that is certain to be faster and more flexible than any alternative procedure that has been proposed. The "at least as effective" test – which we anticipate will utilize reasonably contemporaneous benchmark technologies – allows the

Commission to admit other technologies using its own judgment as to whether those technologies are as effective in preventing the unauthorized redistribution of Marked and Unscreened Content. Together, these criteria provide a reliable, objective, and fair means of authorization. *See* Comments of the MPAA *et al.* ("MPAA *et al.*") at 2-3; *see also* Comments of the MPAA et al., in CS Docket No. 97-80, PP Docket No. 00-67 (the "Plug & Play" proceeding) at 3-4 (filed Feb. 13, 2004) (hereafter "MPAA Plug & Play SFNPRM Comments"). The Commission should adopt the criteria contained in the Joint Proposal to the Broadcast Protection Discussion Group ("BPDG") and submitted as Section X.21(c) of Appendix A to our initial comments to this FNPRM as the permanent means of authorizing digital output and recording technologies. *See* MPAA *et al.* at 2-3; *see also* Comments of DirecTV, Inc. ("DirecTV") at 12 (supporting marketplace determinations); Comments of the Digital Transmission Licensing Authority LLC ("DTLA") at 4-5. For convenience that Appendix is included as Appendix A to this filing.

Use of the "at least as effective test" should be limited to the benchmark technologies that were considered and formed the basis of the Joint Proposal by multiple representatives of the BPDG. Thus, it should extend only to those benchmark technologies that are approved under the "marketplace" criteria, and not to technologies that secure approval under the Commission's interim procedures, or any other criteria that may emerge.

A number of comments opposed granting a single industry a "gatekeeping" function over content protection technologies. *See* Comments of the Center for Democracy and Technology ("CDT") at 7; Comments of the Consumer Electronics Association ("CEA") at 6; Comments of Philips Electronics North America Corp. ("Philips") at 7; Comments of Public Knowledge and Consumers Union ("PK/CU") at 14; Comments of Verizon ("Verizon") at 2, 7. This

fundamentally misconceives our proposal. No one in the Broadcast Flag proceeding has ever proposed granting "gatekeeping" powers to a single industry. As DTLA has noted, the Joint Proposal allows content providers to play at most a "gate-*opening*" – not a gatekeeping – role. *See* DTLA at 17. Under the three marketplace criteria, a *technology provider* that had entered into an agreement with content providers *or* hardware or software vendors would be able to secure fast and easy authorization. Furthermore, the "at least as effective" test allows a neutral decisionmaker – the Commission – to determine if a technology not adopted in the marketplace is nevertheless sufficiently effective to be approved, thus eliminating any possibility of "gatekeeping."[2]

B. If the Commission Wishes to Explore Additional "Functional Requirements," It Should Consider a Model Developed by MPAA

In its FNPRM, the Commission (at Paragraph 62) sought comment on "objective" and "functional" criteria. As we have shown, the marketplace criteria of the BPDG Joint Proposal are the most objective and capable of wholly impartial administration and measurement. *See* MPAA *et al.* at 2-3; MPAA Plug & Play SFNPRM Comments at 3-4. The added "at least as effective as" criterion is an equally objective measurement of functional characteristics. Thus,

[2] Genesis Microchip proposes that only a "ANSI-accredited standards-setting organization or open standards group with ANSI-equivalent policies" should grant such technology authorizations, and such authorizations should be reviewed by an advisory committee. Comments of Genesis Microchip, Inc. ("Genesis") at 6-7; *see also* PK/CU at 14 (standards bodies should be consulted). However, as an administrative agency capable of performing technical analyses, the Commission is fully qualified to perform this function, and neither a standards-setting body nor an advisory committee is necessary. *See* Comments of the IT Coalition ("IT") at 13-14; Comments of the National Cable & Telecommunications Association ("NCTA") at 4; Comments of Time Warner Inc. ("TW") at 13. The authorization of a technology under the Joint Proposal criteria does not set a standard, but merely places a technology on a list with numerous other technologies to choose from. Notably, several other comments make similar recommendations for a criterion that places decisionmaking power in the Commission's hands. The Center for Democracy and Technology, for example, proposes that the Commission in effect judge proposed technologies according to whether "the technology effectively frustrate[s] an ordinary user from indiscriminate redistribution of protected content to the public over the Internet or through similar means." CDT at 5. The "at least as effective" test is far superior to these other proposals in that it provides the Commission with a set of concrete benchmarks against which to measure technologies – they must be as effective in preventing unauthorized redistribution, by whatever method, as those technologies that have already been authorized pursuant to the marketplace criteria.

our proposal discussed in Section I.A above carries forward the Commission's interest in both objectivity and functionality.

In contrast, other parties have urged the Commission to reject market criteria in favor of "functional criteria" that are so abstract as to be of no practical benefit. These inadequate proposals demonstrate the difficulty of specifying functional criteria for Table A technologies and reinforce the need for adoption of market-based criteria, such as those proposed by the MPAA. Even if the Commission were to consider functional criteria, however, the Commission should reject the proposals so far advanced, which would unacceptably compromise the integrity of Table A and of the Broadcast Flag as a whole. Although the MPAA believes that any set of functional criteria carries too great a risk that Table A will be populated with insecure protection technologies – a risk that an (appropriately) high withdrawal standard will necessarily exacerbate – the MPAA feels constrained to respond to the various proposals by delineating criteria that would at least mitigate that risk. The characteristics of this set of criteria are that:

- It provides detailed descriptions of specific functionalities and characteristics that technology vendors should consider, and that the Commission can review. It thus fulfills – far more than the minimal if any guidance offered to the Commission and vendors by others' "functional" proposals – the expressed desire of many commentators for direction and certainty.

- It relies upon encryption-based techniques. We are not aware of any non-encryption based technology – and none has been proposed[3] – that will enable redistribution protection to be effectively and efficiently perpetuated to downstream ("sink") devices without enmeshing the Commission in regulation beyond the very limited sphere of demodulators and peripheral TSP products ("Covered Products") to govern the behavior of every device that is capable of receiving digital outputs from a Covered Product. Moreover, the unencrypted passage of Marked or Unscreened Content must inevitably

[3] Philips proposed in its comments that the criteria permit the submission of a non-encryption solution – a watermark – as a Broadcast Flag protection technology. *See* Philips at 8-10; *see also* DTLA at 4. As the MPAA has noted before, however, the Philips proposal has several serious problems for which, to date, no one has proposed a solution. Most critically, the Philips proposal would require watermark detectors be installed, not just in demodulation devices, but in *every* device that could possibly receive and record, output, or display the content. Thus, the regulatory reach of such a proposal would vastly exceed the scope of the Joint Proposal.

expose that content to unauthorized interception and consequent uncontrolled redistribution, as any downstream product may simply ignore contrary directions.

- It incorporates a level of robustness that mirrors that of the Joint Proposal. Two comments proposed robustness rules for technologies that mirror, instead, those adopted by the Commission for Covered Demodulator Products. *See* DTLA at 9; IT at 11. The standard for robustness of technologies is particularly important to the success of the entire Broadcast Flag scheme, and thus it is especially critical that the Commission adopt an adequate level of robustness for content protection technologies to be certified under this regulation. For the reasons explained in the Petition for Reconsideration and Clarification of the MPAA in MB Docket No. 02-230 (at 2-21), the robustness rules adopted by the Commission for Covered Products are not adequate. Moreover, the content protection technologies used to pass digital content *from* regulated demodulators are likely to be a key point of attack among numerous and widely distributed downstream devices. As Philips noted in its comments, a content protection technology must be sufficiently robust to make it "difficult for the expert to distribute any attack on a component in a form that is implementable by an average user." Philips at 15. As noted in our initial comments, our Petition for Reconsideration, and again below, the result of a compromise of a technology may be much more severe than the compromise of a single device. If the Commission adopts functional criteria, therefore, it must provide for a level of robustness that will ensure the integrity of the entire system.

- It requires that approved technologies incorporate "localization." This is discussed further below; but it should be noted here that our model requires that outputs be effectively localized in their "normal course" of operation. *See also* DTLA at 8. Thus, this model does not impose any impracticable burden, even under contemporary limitations of technology.

- It requires that authorized technologies incorporate an effective mechanism for revoking the identifying keys of downstream technologies. (As discussed in our initial comments at 9, revocation is an important but limited tool in dealing with unfortunately inevitable hacking attempts and related intrusions, and is a more desirable alternative, when useful, than the actual "withdrawal" of technologies from Table A because it preserves the full past and future functionalities of unaffected devices.) Consistent with private sector licensing arrangements, we have limited the mandatory revocation feature to specified cases of compromise – lost, stolen, misdirected, and unlawfully cloned or disclosed keys or identity certificates. *Accord*, DTLA at 12; Matsushita at 4. Hence, revocation is not required for other cases or causes of compromise, or for non-compliance with downstream licenses generally. However, revocation may be insufficient to remedy broad-based compromises affecting myriad devices. In order to (a) limit recourse to "withdrawal" from Table A while (b) not causing the migration of attractive content to alternative distribution channels, we have also required that "system renewability and upgradeability" be provided for software and upgradeable firmware implementations of Table A technologies; but it is not required for other implementations where it would be unduly burdensome.

The three market-based criteria contained in the Joint Proposal are critical to ensuring a fast-track process for Table A approval. Absent those criteria, the authorization process may become mired in procedural and substantive challenges, leading to a stagnant, underpopulated Table A, to the detriment of consumers as well as content providers. As indicated above, the functional criteria proposed by others lack the specificity necessary to guide technology developers or Commission determinations as to whether particular technical requirements have been met, or to insure any amount of security for authorized technologies. The flaws in the proposal by Hewlett-Packard and Microsoft cited in the FNPRM, *see* Broadcast Flag Order ¶ 62 n.141, were analyzed in detail in our initial comments on this FNPRM. *See* MPAA *et al.* at 4-6. The functional criteria proposed by others, such as DTLA and the IT Coalition, share many of the flaws of the HP-Microsoft proposal, including the absence of any limitation on the geographic reach of the redistribution of Marked and Unscreened Content. *See* DTLA at 8-12; IT at 11-13; Philips at 13-22. The comments of Philips, for example, state that a technology must "prevent the unauthorized, indiscriminate redistribution of broadcast content," and define requirements for cryptographic elements, *see* Philips at 15-16, but the criteria Philips proposes contain no provisions requiring technical limitations on the reach of redistributed content, and propose no means of measuring the security of the non-encryption-based systems Philips would allow.

C. The Commission Must Provide for an Adequate Opportunity to Challenge Proposed Technologies

No matter what criteria they proposed, most comments agreed with the Joint Proposal that there must be an opportunity for content providers to object to a proposed technology. *See* MPAA *et al.* at App. A § X.21(c)(6); *see also* Comments of ATI Technologies, Inc. ("ATI Technologies") at 2; CDT at 7-8; DTLA at App. A; IT at 9; NCTA at 3; TW at 14. Most of

those who commented agreed, at least implicitly, that the Commission itself should act as a neutral arbiter of whether a non-marketplace criterion is met. However, a few comments propose that technology providers be allowed to fully "self-certify" compliance with the regulation, apparently without opportunity for regulatory objection, contest, or verification. *See* Comments of the Home Recording Rights Coalition ("HRRC") at 6; Philips at 10-11; Verizon at 9.[4] That is, some of the comments endorse a procedure whereby millions of noncompliant devices could be allowed to flood the marketplace with no vetting process whatsoever before content providers could have an opportunity to object. In such a situation, the regulation would quickly become toothless, the Commission will be burdened by enforcement requests and proceedings, and consumers will be forced to pay the price when inadequate technologies are withdrawn. None of these results should be allowed to occur; the Commission's regulation must provide for a thorough review of proposed technologies before they are authorized.

Furthermore, no matter what criteria are ultimately adopted by the Commission, whether it is the criteria contained in the Joint Proposal or other criteria, the Commission must ensure that content providers have a meaningful opportunity to review whether the criteria are in fact met by a proposed technology and to object to technologies that fail to meet those criteria. Several comments mistook and reversed the appropriate burden of producing evidence: they proposed a high threshold for a prima facie case against a proposed technology, without requiring any detailed showing by the technology provider as to how its technology will prevent the unauthorized redistribution of Marked and Unscreened Content. *See, e.g.*, CDT at 7-8; IT at 10. The ability to object, however, will be rendered useless unless there is a corresponding obligation

[4] While several comments state that they are in favor of "self-certification," some of those also express support for an objection process under which a technology could be reviewed by the Commission prior to authorization. *See* IT at 10 (calling for "full self-certification," but with "an opportunity for non-frivolous objections").

on the part of technology providers to demonstrate precisely how their technology meets the criteria. The Joint Proposal and our submission, for example, requires such a detailed showing in Section X.20(c) of Appendix A.

D. The Scope of Prohibited Redistribution Should Focus on the Local Environment

The MPAA *et al.* have recommended against adopting a definition of "Personal Digital Network Environment" at this time, given the fact that many of the affected business models are in a state of flux, and defining such a term could impact not only existing and emerging means of distribution, but also the copyrights of content owners. Most comments agreed that it is premature at this time to define a PDNE. *See* CDT at 9; IT at 3, 8; Comments of Matsushita Electric Corp. of America ("Matsushita") at 3; Philips at 31; PK/CU at 11-13; TW at 11-12; Verizon at 3-5.

Nevertheless, with or without a "PDNE," the scope of redistribution permitted by a Table A technology must be defined as limited to the "Local Environment," either as the result of direct application of the relevant criteria (such as our proposed Marketplace Criteria, which will self-define the issue of scope), or otherwise. Localization is currently the only reliable means to limit the unauthorized redistribution of content. Localization simply means that the technology "affirmatively and reasonably constrains unauthorized distribution beyond the [device's] local environment," including by the use of "controls to limit distance from a Covered Product," or "limits on the scope of the network addressable by such Covered Products," in addition to "affinity-based controls used to approximate association of such set of devices with an individual or household." MPAA *et al.* at 7-8; Appendix B at § X.A; *see also* DTLA at 8 (proposing similar scope).

Several comments proposed an extremely broad and vaguely worded "scope" that would not place any reasonable constraints on the unauthorized redistribution of content. *See* CDT at 2; IT, HRRC, Philips at 16-17; *but see* Sports Leagues at 6. Indeed, some comments proposed defining only a safe harbor of permitted redistribution – a concept that would be impossible for a "protection technology" to enforce, or to reconcile with copyright law – rather than sharply delineate the outer limits of what the technology will allow. *See* CDT at 6; CEA at 6; HRRC at 4; Philips at 17-18. Thus, proposals such as the IT Coalition's to define the scope of redistribution as "inhibiting indiscriminate redistribution over the Internet," IT at 3, do nothing to achieve the Commission's goal of "forestall[ing] any potential harm to the viability of over-the-air television." Broadcast Flag Order ¶ 4.

Going beyond merely proposing a vague scope, the IT Coalition has affirmatively opposed the concept of localization in its comments. The IT Coalition argues instead that "location control" is simply "an attempt to protect current broadcaster business models rather than address the problem before the Commission." IT at 7. However, it is not simply broadcaster business models that are at stake, but also the Commission's longstanding and fundamental policy of the promotion of local broadcasting.[5] Free over-the-air television is made available by a system of local affiliates and television stations that depends on local advertising targeted at a local viewing audience drawn in not only by network first-run programming, but

[5] *See In the Matter of General Motors Corp. & Hughes Elecs. Corp., Transferors, and The News Corp. Ltd., Transferee*, M.B. Docket No. 03-124, FCC 03-330 ¶ 210 (Jan. 14, 2004) (localism one of "our most important Communications Act goals and policies"); *In the Matter of 2002 Biennial Regulatory Review*, 18 FCC Rcd 13620 at ¶ 73 (rel. July 2, 2003). Indeed, last summer the Commission announced the launch of a "Localism in Broadcasting" Initiative to "enhance localism among radio and television broadcasters." *FCC Chairman Powell Launches "Localism in Broadcasting" Initiative*, FCC Press Release (Aug. 20, 2003). The Commission's policy of localism has been affirmed and reaffirmed by Congress, *see* 47 U.S.C. § 534(a) (requiring carriage of "local commercial television stations" by cable operators); H.R. Rep. No. 104-104 at 221 (1996), and by the courts, *see United States v. Southwestern Cable Co.*, 392 U.S. 157, 175 (1968) (Commission acted properly to prevent public deprivation of "the various benefits of a system of local broadcasting stations"); *NBC v. United States*, 319 U.S. 190, 203 (1943) ("Local program service is a vital part of community life.").

also by syndicated shows as well as local news programming. The key to the generation of revenue by local affiliates and television stations is that their programs are available to their local viewing audience only at certain times and on certain days. *See* Joint Comments of the MPAA *et al.*, MB Docket No. 02-230, at 9-10 (filed Dec. 6, 2002). This system of local broadcasting has been in place, and has been a fundamental goal of the Commission, for decades. Localization helps to ensure that the locally broadcast content is not undermined by distant signals or by permanently available archives of syndicated programs.

Instead of localization, the IT Coalition proposes allowing Table A technologies to redistribute content almost anywhere. "Given the increasing ubiquity of portable digital devices and secure communications across networks, no reason exists to limit consumers' use and enjoyment of DTV to a given location, or other artificially defined 'environment,' as long as indiscriminate redistribution is inhibited. . . . Location is irrelevant as long as the consumer is located within a wide, almost continent-sized, region." IT at 7. The IT Coalition's broad scope will not achieve the goal set by the Commission here. Localization thus must be a key component of any content protection technology proposed for digital terrestrial broadcast television content. While the IT Coalition no doubt has its own business models to protect, its suggestion to allow essentially unhindered redistribution cannot be accepted in this proceeding.

E. The Commission Should Not Undertake a Detailed Review of Licensing Terms That Do Not Impact the Security of Marked or Unscreened Content

Other comments proposed that the Commission perform detailed reviews of the licenses of technologies proposed for Table A. *See* AAI at 5; Philips at 22. Such detailed reviews are not only unnecessary, they may interfere with innovative product designs in content protection technologies. In the marketplace, device manufacturers, technology providers, content providers, and ultimately consumers will all negotiate at arm's length to arrive at the optimal

licensing conditions. The marketplace criteria contained in the Joint Proposal will allow such negotiations to proceed unhindered and thus obviate the need for any overarching license review.

Nevertheless, even under the "at least as effective" test, some review of the licensing terms of a proposed protection technology is necessary. For example, a proposed technology must require that adequate security be given by the downstream device to Marked and Unscreened Content to be effective. *See* MPAA *et al.* Att. A § X.21(c)(1)(C); *see also* TW at 14. Under the Joint Proposal, the license for a technology proposed under the "at least as effective" test must also contain provisions for enforcement of the license and for "Change Management," which is defined as "a process by which content owners are provided a specified right or ability to meaningfully object to particular amendments to content protection agreements." MPAA *et al.* at Att. A §§ X.21(c)(1)(C), X.27. There is no need, however, to require that all change management provisions be drafted in exactly the same way – for example, similar to those contained in the DFAST license – so long as they provide content owners with an ability to meaningfully object. The Commission should also require that, as the American Antitrust Institute proposed, "all putative licensors of governmentally approved technology should, as a threshold matter, be required to identify any and all patents, copyrights, or trade secrets they deem necessary to the technology being licensed." Comments of the American Antitrust Institute ("AAI") at 6. The MPAA *et al.* have similarly proposed, as a criterion for Table A, that "in the event that use or triggering of the [proposed] technology imposes any obligations upon content owners or broadcasters, such technology may only be added to Table A if . . . such obligations have been fully disclosed on the record of the application." MPAA *et al.* Att. A § X.21(c)(9).

Some licensing terms, however, are better left unregulated, so as not to constrain innovation in designing content protection technologies. For example, technologies should not be required to approve the use of all other authorized technologies in downstream products. *See* AAI at 10-12; Philips at 24; PK/CU at 14-15. It may be the case that a technology provider may want to construct and sell a completely closed and proprietary system, using only its own output and recording technologies. *See* DTLA at 16. The Commission should not ban any such attempt from the marketplace. Similarly, given that there will be a plethora of technologies for device manufacturers and consumers to choose from, the Commission does not need to engage in detailed policing of royalty rates and other licensing terms to ensure that they are reasonable and non-discriminatory. *See* PK/CU at 14. If the Commission establishes a procedure for conducting such a review, it can be sure that every competitor of every technology provider will challenge and appeal any determination with respect to the reasonableness of the provider's licensing terms, meaning that there will be no quick authorizations onto Table A. The Commission should also not require the independent management of licenses by a neutral third party. *See* AAI at 15. Again, there will be numerous technologies proposed for Table A. To the extent that a technology's license is not to manufacturers' or consumers' liking, they will be free not to install that technology or purchase a product with that technology included. The free operation of the market will be able to determine which licensing provisions are optimal far more easily and accurately than the Commission, deciding *ex ante*. *See* DTLA at 16.

II. The Commission Should Not Create an Exemption for "Professional Equipment"

Harmonic has filed a comment proposing an amendment to the regulations adopted in the Commission's November 4, 2003 Report & Order. Harmonic's amendment would add definitions for "Professional Equipment" and "Professional User" in place of the written

commitments provided for in Section 73.9002(d)(2), and exempt such "Professional Equipment" from the scope of the regulation. Harmonic's request should not be granted for two reasons.

First, although filed as a comment to the Commission's FNPRM, the filing is in fact not responsive to any of the Commission's requests for comments. Rather, as a proposal to amend the existing regulations adopted November 4, Harmonic's filing is instead a late-filed petition for reconsideration, which should have been submitted by January 2.

Even if considered timely, Harmonic's petition should be rejected. With increasingly sophisticated equipment becoming available to consumers every year, including a thriving "prosumer" market, the line between professional equipment and consumer equipment would be extremely difficult to define, resulting either in noncompliant equipment becoming available to the general public or bona fide professionals having difficulty obtaining noncompliant equipment. During the Broadcast Protection Discussion Group, representatives from several different industries attempted to create a definition of "professional equipment" that would duly limit the exception to the regulation, but were unable to do so. The only professionals with a legitimate need for non-compliant equipment are those already identified in Section 73.9002(d)(2), and the written commitment provisions clearly identify those professionals and clearly set out the obligations with respect to them.

Harmonic has failed to identity a sufficient reason why it or others will not be able to comply with the written commitments provision. Although Harmonic states that "we believe these filing requirements would be burdensome," in fact the written commitments required by Section 73.9002(d) are *de minimis*. The written commitments are merely an agreement to abide by the regulation, with only certain essential information being required. The burden of filing a

written commitment will therefore be virtually non-existent, and certainly does not justify the blurring of the line between consumer and prosumer devices as described above.

III. The Commission Should Adopt the Standard and Procedures for Withdrawal Contained in the Joint Proposal

As we noted in our initial comments, some confusion has arisen in this proceeding between removal of a technology's authorization, or "withdrawal," and revocation of an individual device's authorization to decrypt content. Withdrawal concerns a global compromise of a technology, whereas revocation deals with a compromise of a single device.[6]

Most of the comments are in agreement that a withdrawal provision must be available for those cases where a technology has been seriously compromised and attempts to mitigate that compromise have failed. *See* CEA at 9; DTLA at 19-20; Comments of the Electronic Frontier Foundation ("EFF") at 10; IT at 17; Matsushita at 3; Philips at 31-32. Many of the comments also agreed that the Commission should weigh the harms against content providers, technology and device manufacturers, and consumers, and decide on that basis whether withdrawal is necessary. *See, e.g.*, DTLA at 19-20; IT at 17-18; Matsushita at 3.[7] In such a situation, the only alternative to withdrawal would be to allow the continued legal manufacture of products with compromised protection technologies, a result that would ensure the rapid demise of the entire system by causing the very migration of content to non-broadcast distribution channels that teh Commission seeks to avoid. Surprisingly, a few comments proposed just that. For example, the

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[6] There is a third type of removal provided for in the criteria contained in the Joint Proposal: "disqualification" of a listed technology as a benchmark for purposes of the "at least as effective" criterion for Table A. *See* MPAA *et al.* App. A § X.23(a). A disqualified technology is not removed from Table A and may continue to be employed in Covered Products.

[7] ATI Technologies argues that content owners and the Commission itself should be barred from having any input in withdrawal decisions because they do not manufacture technologies or devices. *See* ATI at 2-3. By the same token, however, manufacturers do not produce the content that would be at risk from a compromised

Consumer Electronics Retailers Coalition opposes any Commission action that would diminish the "functionality or usefulness" of products or interfaces. Comments of the Consumer Electronics Retailers Coalition ("CERC") at 3; *see also* HRRC at 5. ATI Technologies proposes that a product should not be forced to be withdrawn from the marketplace until its natural obsolescence. *See* ATI Technologies at 3. This, however, is an empty proposal, as the very fact of a substantial compromise will ensure a perpetual market for the illicit use of that technology – the compromise will itself become a formally or tacitly marketed feature of the product – unless and until it is withdrawn. The MPAA *et al.* support a reasonable grace period for the cessation of use of a compromised technology, but that grace period should not be allowed to be indefinite. *See also* CEA at 9.

Device revocation, on the other hand, should be considered by the Commission as one of the security-related licensing terms of a content protection technology. As is the case with existing protection technologies now, *see* Philips at 20-21, device revocation will be performed pursuant to the terms of the license, rather than by Commission direction. Again, as with other license terms, the market is fully capable of determining the optimal licensing terms for device revocation, and no need has been demonstrated in any of the comments for Commission supervision of this matter.

IV. The Commission Should Require Encryption of the Digital Basic Tier

The MPAA *et al.* have proposed that the Commission require cable operators to encrypt the digital basic tier, including retransmitted digital broadcast content. Several comments, however, oppose encryption of the digital basic tier, primarily on one of three grounds: first, that

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technology. Rather than debate whose ox would be more gored by a partisan decision, it seems self-evident that a neutral decision-maker such as the Commission should govern the withdrawal process.

the NCTA's proffered justification for it was inadequate; second, that it would interfere with cable-compatible devices; and third, that such encryption is not necessary to convey the Flag to cable set-top boxes.

First, it is important to note that the reasons the MPAA *et al*. support encryption of the digital basic tier are not necessarily the same as those offered by the NCTA and others. In our opinion, encrypting the digital basic tier would serve two beneficial functions: it would provide a higher level of security to all of the content on the digital basic tier, whether a retransmission of a digital TV broadcast or not, the same as is now offered by satellite operators; and it would permit cable operators to use new forms of modulation beyond the currently mandated 8-VSB, 16-VSB, 64-QAM, or 256-QAM forms without petitioning the Commission for a waiver or amendment of the regulations, *see* TW at 16. None of the initial comments to the FNPRM dispute these two claims.[8] It is not clear, however, that a cable operator's conditional access system could be used to move protected content around a home network, since at least in a Plug & Play device it normally would be decrypted by the CableCARD, passed over the interface using DFAST, and then re-encrypted for output or recording only by the receiving product. *See* Opposition of the MPAA to the Petition for Reconsideration or Clarification Filed by the NCTA in M.B. Docket No. 02-230 at 8-9 (filed Mar. 10, 2004); MPAA *et al.* at 12-13; CEA at 2-3; CERC at 2; HRRC at 3; Matsushita at 1-2; *but see* NCTA at 4.

The other objections to encryption of the digital basic tier all miss their mark. For example, some comments argued that encryption of the digital basic tier would strand consumer devices such as PVRs and television sets that cannot decrypt the conditional access method used.

[8] Although the CEA and EFF question the need for the protection of retransmitted broadcasts, CEA at 3; EFF at 8-9, neither disputes the fact that encrypting such retransmissions would make them more secure. Given that the CEA's and EFF's remaining criticisms of encryption are wide of the mark, as explained above, no reason exists to justify forfeiting the greater security.

See CEA at 3; EFF at 7; HRRC at 3. However, these comments overlook the fact that, aside from digital cable set-top boxes provided by cable operators, very few consumer digital TV receivers exist in the marketplace that have in-the-clear QAM tuners.[9] And as those products are all high-end models, it is likely that their owners subscribe to premium services that would require use of CableCARD-equipped a set-top box that could connect to these legacy TVs.

Second, some of the commenters objected that encryption of the digital basic tier would allow cable operators to use encryption as a proxy for the presence of the Flag. If so, these comments argued, then encryption of the entire digital basic tier would mean that even unmarked, but encrypted, programming would be protected from redistribution. *See* DTLA at 3; EFF at 8. These comments misconstrue the intent of the Commission's regulations, however. Section 76.1909(b) specifically requires any retransmitter that encrypted the retransmitted signal to:

> upon demodulation of the 8-VSB, 16-VSB, 64-QAM or 256-QAM signal, inspect either the EIT or PMT for the Broadcast Flag, and if the Broadcast Flag is present:
>
> > (1) securely and robustly convey that information to the consumer product used to decrypt the distributor's signal information, and
> >
> > (2) require that such consumer product, following such decryption, protect the content of such signal as if it were a Covered Demodulator Product receiving Marked Content.

The Commission should clarify that the intent of Section 76.1909(b) is that both the presence *and absence* of the Broadcast Flag must be accurately conveyed to the receiving device. Thus, a cable operator who used encryption for all programming would need to use another mechanism,

[9] We are not aware of any sales of digital recorders with in-the-clear QAM tuners in the marketplace. While there may be a small number of digital TV receiver products sold into the market with in-the-clear QAM tuners, *see* EFF at 7, most manufacturers of digital cable-compatible products have introduced CableCARD capability in their latest products.

such as CCI signaling across the CableCARD-Host interface, to signal the presence or absence of the Broadcast Flag.

V. The Broadcast Flag Must Apply to Software Demodulators

In their initial comments, the MPAA *et al.* noted, contrary to the claims of some, that the Broadcast Flag regulation would not interfere with the construction of open-source software demodulators, and would not be more oppressive than any of the numerous regulations that now apply to open-source software DTV devices. *Compare* MPAA *et al.* at 13-18 *with* EFF at 3-6; PK/CU at 6-11. Exempting all demodulators with a software component from the regulation would cause grave harm to the effectiveness of the regulation. MPAA *et al.* at 14; *see also* Matsushita at 2.

None of the other comments filed raise significant challenges to the points made in our initial comments. The EFF argues, wanly, that software is not a "component," and that therefore demodulators made from software do not fit the Commission's definition of "Demodulator." The EFF offers, as its sole support for this claim, the fact that the Commission did not adopt the language of the Joint Proposal that added to the definition of "Demodulators" an explanatory phrase: "e.g., a demodulation chip or demodulation software." *See* EFF at 2 & n.4; Joint Comments of the MPAA *et al.*, MB Docket No. 02-230, at App. B § X.1 (filed Dec. 6, 2002). However, if the EFF's explanation were correct, the Commission would have eliminated not only software, but also demodulation chips from the definition of "components," a result that is plainly absurd. Furthermore, the plain meaning of "component" belies the EFF's claim: a "component" is "a constituent part; ingredient." Webster's Ninth New Collegiate Dictionary 270 (1984). Software is clearly a "constituent part" of a software demodulator.

Public Knowledge and Consumers Union similarly claim that software demodulation products are almost by definition "robust" because "the average person does not program or engage in circumvention or alteration of software, be it open-source or proprietary." PK/CU at 10. This statement illustrates perfectly the difficulties with the definition of robustness the Commission has adopted in the Broadcast Flag regulation, which the MPAA has petitioned the Commission to reconsider. *See* Petition for Reconsideration and Clarification of the MPAA, MB Docket No. 02-230, at 2-21 (filed Jan. 2, 2004). Regardless of the outcome of that petition, however, the Commission cannot adopt a robustness standard as low as that proposed by Public Knowledge and Consumers Union. Most consumers do not remove the covers on their CE devices and computers either. Thus, under the interpretation of "robustness" propounded by Public Knowledge and Consumers Union, all demodulation products everywhere would be by definition robust. Such an interpretation strips the concept of "robustness" of any meaning.

Public Knowledge and Consumers Union also claim that software-defined radios should be exempted from the Broadcast Flag regulation because the "software components" will be unable to meet any compliance requirements. This argument ignores the fact that it is not a "component" that must be compliant with the regulation; it is a "Covered Demodulator Product" – which may include a Demodulator – or a Peripheral TSP Product. Thus, in the case of a Covered Demodulator Product, it is the combined package of software and hardware components that must meet the Compliance Rules of the regulation. The two groups betray a further lack of understanding of the regulation when they assert that "a compliant device is one that senses whether other, connecting devices are playing by the rules." PK/CU at 8. Compliant products do no such thing; they merely ensure that Marked and Unscreened Content is routed only to certain outputs and recorded only by certain recording methods. They are not required to

communicate with connected devices. Public Knowledge and Consumers Union offer no explanation as to why a demodulation product with both hardware and software components could not achieve these goals as well as any other product.

Public Knowledge and Consumers Union also assert that application of the regulation to demodulators with software components could place the Commission "in the position of regulating every programmer, every personal computer, and every antenna, because the combination of these elements might lead to a noncompliant demodulator." PK/CU at 9. Again, this statement is without any basis in fact. Under the regulation, the Commission is in the position of regulating only those combinations of elements that constitute a Covered Demodulator Product or a Peripheral TSP Product; if it is not one of those two things, the Commission does not have to regulate it.

CONCLUSION

For the reasons stated above, the Commission should adopt the criteria contained in the Joint Proposal, including the withdrawal standard and procedure, and should require the encryption of the digital basic tier. The Commission should not exempt demodulators with software components from the regulation, nor create a broad exemption for "professional equipment," either of which would create a vast loophole that would undermine the regulation's effectiveness.

* * *

Respectfully submitted,

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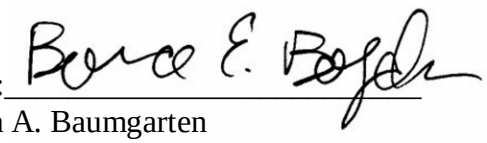
By: 

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